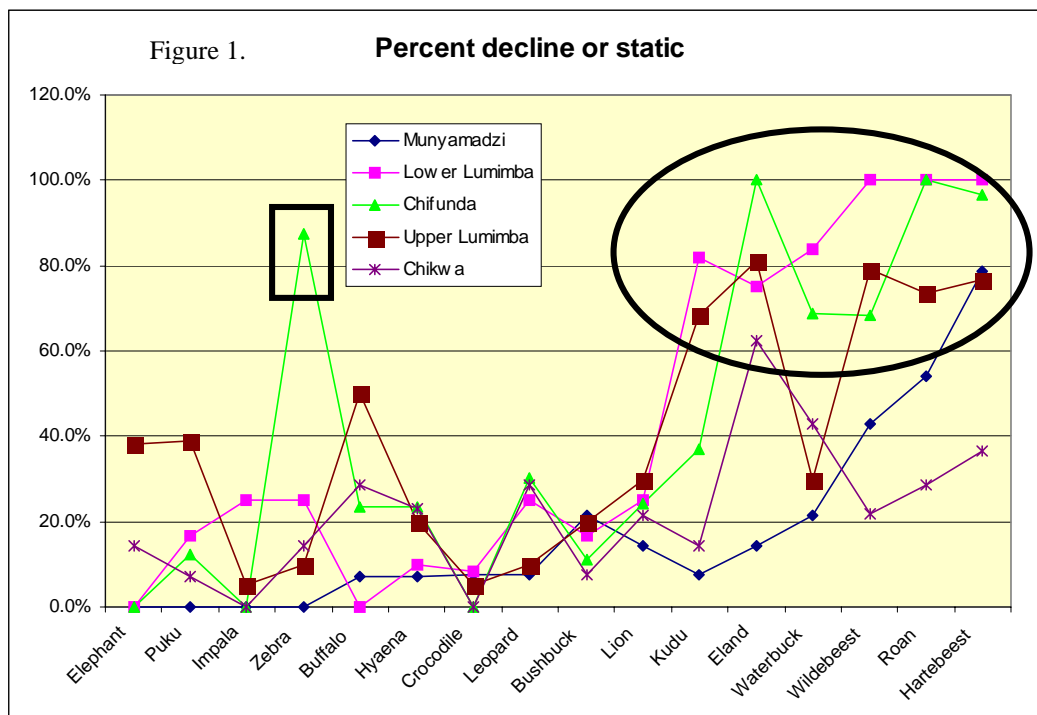


for community-based services to assist national license hunters be adopted and further developed to encourage greater community participation and employment in this sector. The longer-term goal would be to expand community skills to support a mix of hunting and non-hunting tourism opportunities with secondary income generation from vegetable gardening, curios, cultural performances, and so forth.

Wildlife management trends

Given that income growth correlate with ADMADE areas that have relatively well developed CRB leadership structures, the next important question is whether these trends also correlate with growth trends in wildlife numbers. Confirmation of this would affirm the importance of ADMADE for increasing wildlife numbers while utilizing the resource for community income.

Direct counts of most wildlife species in ADMADE areas, usually done by aerial surveys, are generally plagued with large sampling errors and high costs. ADMADE has therefore opted for indirect measures based on data that can be collected by communities and have comparable if not higher levels of accuracy as conventional counting methods. The ADMADE Sustainability Project will present a full elucidation of these methods and their results in a separate technical report. The results presented below show some of the initial findings. Figure 1 examines the results of a questionnaire survey administered to village scouts and regular scouts who have worked in a given area for three or more years and shows the percentage of respondents who felt that animals have either decreased or remained unchanged. The value for 'decreased' was weighted by a factor of two to provide a stronger contrast for those species respondents believed

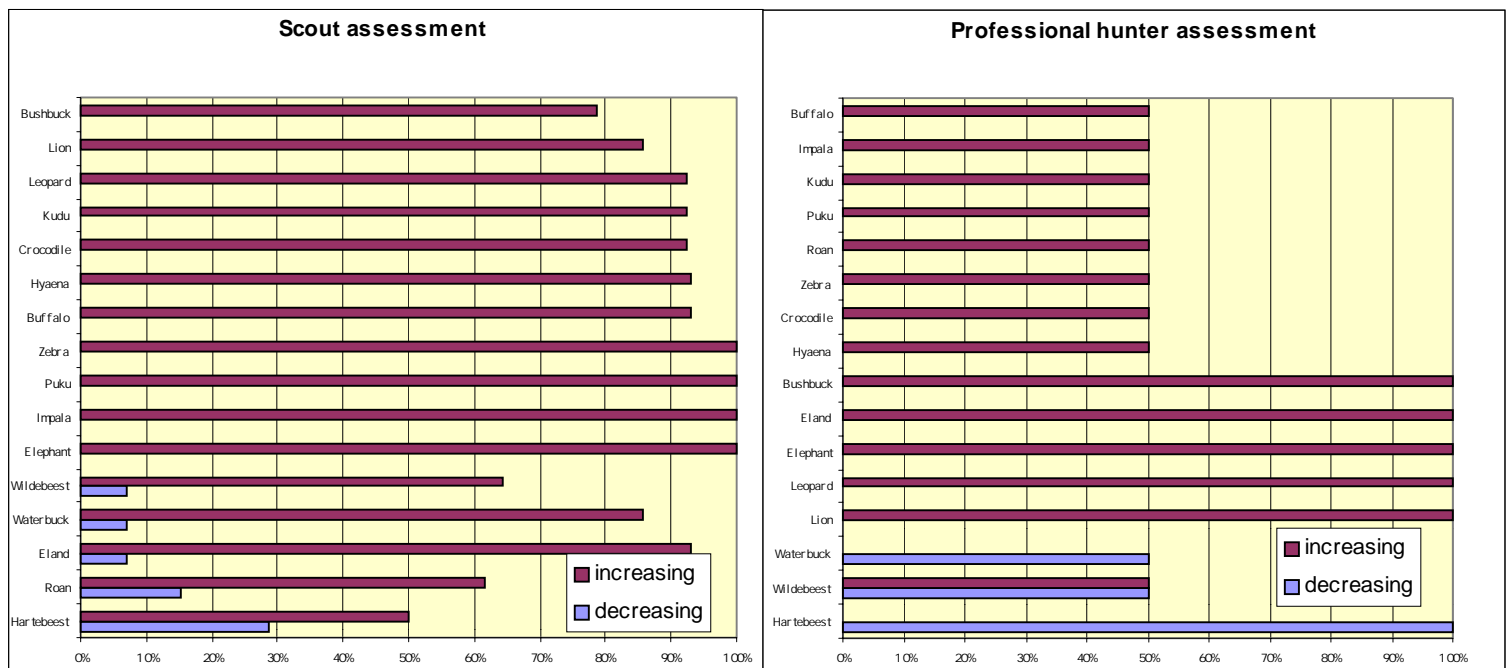


were stable or unchanging. Species critical to the safari industry that need close examination are buffalo, lion, leopard, roan and eland. Elephants are not hunted but are included because of their importance as a potential indicator of poaching by illegal hunters who typically originate from outside the area. Results (shown by the

elliptic circle) suggest eland, wildebeest, roan and hartebeest are decreasing in most areas and waterbuck and kudu are decreasing in two areas. All of these species are low density, have similar herd structure, and have a distribution range limited to dry season waterholes. In Chifunda and unlike other areas, zebras are not increasing (enclosed by square) and most likely are decreasing. Adding credibility to these data was the independent confirmation by the area

professional hunter who verified a ‘surprising absence’ of zebra. The same person also confirmed a very healthy and abundant population of kudu, which was corroborated by the low percentage of respondents who believed this species was decreasing. All other species, including buffalo (except for Upper Lumimba) and the big cats were found to be generally increasing and thus able to sustain a safari industry as the income results support.

Further corroboration of these results is a comparison between scout responses and those of professional hunters who have a minimum of three consecutive years of experience in the concession area. This was possible for two areas and close correlation was observed. An example for one (Munyamadzi) is given in the figure below, where only species suggested to be increasing or decreasing are shown. The Professional Hunter (PH) sample (on left) is based on two respondents, each with over five years of hunting experience in the area. Respondents from both samples (scouts and PHs) were independently interviewed and results showed a high degree of similarity for species believed to be decreasing. Exceptions included two species which



scouts suggested were decreasing: eland (7%) and roan (14%), whereas the PHs believed their populations were either unchanging or increasing. Total species sampled in this survey was 16, and from these results only hartebeest had a consistently high score for decreasing for both scouts and PHs. To a lesser extent the same was true for wildebeest and waterbuck. It should be noted that the above methodology is based on the assumption that scouts tend to reflect a higher value for increasing than is probably accurate and results therefore should concentrate on values for decreasing as a more accurate indicator of population trend. The preliminary conclusion from these data is that most species in Munyamadzi are increasing while hartebeest is decreasing as are wildebeest and waterbuck, but less so. Status of eland and roan populations is not very clear but conservatively should be regarded as unchanging.

Measures of hunting effort, hunting success and trophy size for animals hunted by safari clients are also indicators used for assessing population trends and together with trends reflected from respondent interviews, are useful for helping set hunting quotas. The scientific merit of this approach was tested by comparing population sizes, estimated from an aerial counting survey,

with relative population sizes as based on their relative quota sizes set by using these indirect indicators. The results will be presented elsewhere in detail but will show a high correspondence between estimated population size from aerial survey and predicted relative size differences as based on indirect measures. These results therefore support the use of the above indirect measures for evaluating population trends. Furthermore, they also support the overall conclusion that populations for most species are likely to be increasing or are stable except for those species already mentioned.

Other indicators for cross-comparisons

To enhance confidence in the use of indirect measures, there are other indicators that ADMADE has identified useful for measuring to cross-compare. These between-year changes in 1) safari client complaints over land use disturbances, poacher encounter rates taken from patrol data, snare encounter rates, and incidence of animal sightings. These data are systematically evaluated at the end of the year and procedures for doing so are also taught to members of the Resource Management Committee to enable them to evaluate their own resource trends.

Conclusions and recommendations

Revenue levels currently generated by safari hunting are sustainable, provided community leadership is able to effectively manage and control land use disturbances in concession areas, quotas are set correctly and rigorously adhered to, and law enforcement efforts are effectively supported with community revenues. The above results clearly show indications of some success though exceptions underlie potential threats to ADMADE that as of yet have not been adequately resolved. For example, it has been observed that special licenses have been issued for species removed from quota because of evidence supporting a declining population.

Certain species where the above indicators suggest are decreasing should be a focus of community efforts to rebuild their numbers and that both local and national management authorities should intercede with lowered hunting quotas or temporary cessation of hunting. Should reasons for population declines not be from more obvious causes, such as poaching, funding is recommended to conduct more intensive ecological studies of these species to determine the underlying cause.

Maintaining healthy and productive wildlife populations will depend increasingly on the protection of critical habitats as human numbers and activities expand. In this regard, traditional rulers as customary owners of the land are extremely important in helping reduce settlement pressures on wildlife sensitive areas. Support from the traditional rulers in the past has been highly valuable in this regard and a number of examples can be cited. Every effort should be made to help educate and promote traditional leadership in such ways that will help promote ADMADE success. However, there is a disturbing trend already noted with the handing over of their powers as Sub-authority chairpersons in which certain chiefs are making unilateral decisions to compromise community benefits from ADMADE by entering into private land deals with questionable investors. This problem will require close attention in the months ahead, and ZWA may wish to review its policies concerning procedures for would-be tourist investors to secure access to land in a GMA to ensure the broader interests of the community are not compromised by a mis-guided or mis-informed chiefs.

Social and economic benefits

ADMADE impact on the community is evaluated in various ways. As a process, organizational and participatory procedures for facilitating community and gender involvement are assessed. In terms of social benefits, number of households benefiting from a social provided and financed through ADMADE service (e.g. grinding mill, well) is evaluated. Economic benefits are measured from household income derived from ADMADE-related activities. As communities become better organized and skilled in implementing their CRB structure, social and economic benefits derived from ADMADE are expected to grow and thus lower the opportunity costs of allocating land to wildlife. Again, the six areas with functioning CRBs are used to summarize these indicators of ADMADE impact.

Organizational and participatory leadership

A very major improvement in participation levels has been observed with the introduction of the CRB structures and especially following the handing over of ADMADE leadership to the democratically elected leaders. A general feeling shared by most people when interviewed (based on a sample of 35) is that residents have more faith in leaders they elect and who live within their own village as opposed to the previous arrangement, where sub-authority members were usually appointed by the Chief. In this former situation such people were sent to an area to call for a public meeting on behalf of the sub-authority chairman. Participation levels at these meetings were low. The main reason given for this was lack of confidence in the people who convened the meetings. With the new CRB structures, residents expressed the view that they can now bring forward their problems to their own resident leaders elected to represent them and that these elected leaders will work harder to secure their needs under ADMADE. This has encouraged them to attend meetings, unlike in the past.

Since the formation of the Community Resource Boards and the handing over of the old sub-authority leadership in late July this year, there has been sufficient time to make a preliminary assessment of the level of participation and frequency of meetings locally elected leaders are now convening. These results are presented in the Table below and show a uniformly high number of meetings in all areas surveyed and attendance at public meetings averaged over 100. This level of attendance and meeting activity has never been observed before in the ADMADE program. Purpose for public meetings was to explain the new ADMADE structure to residents and to discuss local needs for ADMADE project identification.

| Attendance and number of meetings convened since 1 August 1999, following the CRB elections | | | | |
|--|-------------------|------------|------------|----------------------|
| VAG Name | Public meeting | Attendance | % Women | Committee meeting |
| CRB name: Mwanya | | | | |
| Yakobe | 1 | 120 | 30% | 2 |
| Mukasanga | 1 | 420 | 75% | 1 |
| Chizela | 2 | 200 | 25% | 1 |
| Lukusuzi | 1 | 150 | 20% | 1 |
| Mukwela | 1 | 45 | 5% | 1 |
| CRB name: Chitungulu | | | | |
| Nthombe | 1 | 27 | 11% | 1 |
| Chocha | 1 | 298 | 33% | 1 |
| Kamira | 1 | 54 | 7% | 1 |

| | | | | |
|---------------------------|---|-----|-----|---|
| CRB name: Kazembe | | | | |
| Mtimbasondo | 2 | 28 | 27% | 1 |
| Kazembe | 2 | 65 | 21% | 3 |
| Chiweza | 1 | 90 | 17% | 2 |
| Zokwe | 3 | 135 | 41% | 3 |
| Kataba | 0 | 0 | 0% | 2 |
| CRB name: Nabwalya | | | | |
| Nabwalya | 1 | 78 | 10% | 1 |
| Kazembe | 1 | 75 | 16% | 1 |
| Chilima | 1 | 56 | 11% | 1 |
| Pelembe | 1 | 80 | 13% | 1 |
| Kalembe | 1 | 103 | 21% | 1 |
| CRB name: Chifunda | | | | |
| Kasela | 1 | 74 | 19% | 1 |
| Zimwanda | 1 | 91 | 23% | 1 |
| Luelo | 1 | 225 | 11% | 1 |
| Mapamba | 1 | 300 | 17% | 1 |
| CRB name: Chikwa | | | | |
| Chilumba | 2 | 151 | 53% | 1 |
| Kanga | 1 | 105 | 24% | 0 |
| Lilundi | 1 | 53 | 34% | 1 |
| Lumezi | 2 | 55 | 23% | 0 |
| Chasato | 1 | 55 | 54% | 1 |

The more active encouragement of public debate and participation at VAG-level meetings is becoming an important way for residents to understand how ADMADE works while also creating important checks and balances on accountability of leadership itself. There are a growing number of examples of this, suggesting how powerful a more democratic institution can be in supporting community-based resource management:

- During one public VAG meeting people volunteered information about the misuse of community funds by a person representing the chief. The VAG committee has asked for an outside audit to further investigate the problem to satisfy public demand that their money is safe
- Misuse of community funds by a CRB member in one unit was reported to the Patron, the local chief, who suspended the CRB member from further duties. An investigation of possible financial abuse was carried out and the accused was found guilty, though the amount of money involved was smaller than originally believed. The person was then made to repay the money, given a warning, and then re-instated.
- Under the previous ADMADE structure, a chief in one area considered the hammermills purchased for the community as his own property and therefore collected revenues generated from each of them. These revenues were not accounted and the hammermills fell into disrepair. Now the community is challenging the ownership of these mills by questioning the chief over the previous arrangement and proposing their own way of using cash sales to finance salaries for local residents to collect revenues, provide security, and ensure maintenance of the mill. Public pressure is growing for the chief to accept such arrangements.
- Since the CRB elections and the occurrence of more regular public meetings at the VAG level, there has been an unprecedented number of people volunteering information on illegal hunting activities in the area. In one area, for instance, the VAG chairman received such information on six different occasions in less than two months and according to him, cooperation of this type was never possible during the old ADMADE leadership.

- e. Prior to the CRB and elected VAG committee, one VAG community could not organize itself by volunteering labour to crush stones and ferrying sand to the building site for their clinic. The project delayed for almost three years with two different aborted attempts to build a clinic. Since the CRB election and with new VAG leadership, the community has become much more willing to provide voluntary manpower and the clinic is now nearing completion.

Social benefits

Elected ADMADE leaders are responsible for helping implement projects that meet the development needs of households in the various VAGs. Prior to the election of CRBs, it is doubtful that project identification permitted genuine household participation in these decisions as most of the project identification process was at the Sub-authority level. This contributed to poor public understanding of ADMADE. Since the establishment of CRBs in 1999, VAG meetings are being convened frequently and are emphasizing public participation in the identification of shared household needs and projects that best solve these problems with ADMADE funds. Despite the lack of full participation by VAG residents in the identification of past projects, there is clear evidence that social benefits were being supported by ADMADE and that a significant number of households were benefiting in most areas. A review of these benefits is presented below and reinforces the causal relationship between improved community benefits derived from wildlife and the noted increase in both tourism revenues and wildlife production.

Social benefits supported by ADMADE in five CRB Communities

| CRB name: Chifunda | | |
|---------------------------|----------------------|-----------------------|
| VAG Name | Social service | Households benefiting |
| Kasela | School block (1x3) | 80 |
| | Road construction | 100 |
| | | |
| Zimwanda | School block (1x3) | 100 |
| Luelo | School block (1x2) | 500 |
| | Teachers house (2) | 2 |
| | Hammer mill | 600 |
| | Community vehicle | 22 |
| | Road construction | 500 |
| | Community office | 32 |
| | | |
| Mapamba | School block (1x3) | 150 |
| | School block (1x2) | 500 |
| | Well construction | 100 |
| | | |
| CRB name: Nabwalya | | |
| Kazembe | Teacher's salary (1) | 54 |
| | Road maintenance | |
| Chilima | Teacher's salary (2) | 75 |
| | Family planning | 25 |
| | Football club | 250 |
| | Food security | 200 |
| Kalimba | Teacher's salary (4) | 150 |
| | Family planning | 17 |
| Nabwalya | Basic school | 175 |
| | Teacher's salary (5) | 175 |
| | Clinic toilets | 900 |
| | Family planning | 50 |

| | | |
|-----------------------------|------------------------|-------------------------------------|
| | Football club | 350 |
| | Sewing clubs | 560 |
| | Community vehicles | all |
| | Student support | 15 |
| | Food security | all |
| Pelembe | Teacher's salary (3) | 150 |
| | Hammer mill | 280 |
| | Football club | 150 |
| | Well | 150 |
| | Student support | 3 |
| | Food security | all |
| | Family planning | 30 |
| CRB name: Kazembe | | |
| Kataba | School | 100 |
| | Family planning | 5 |
| Zokwe | School | 165 |
| Chiweza | School | 200 |
| | Family planning | 5 |
| Kazembe | School | 100 |
| | Palace | all |
| | Family planning | 5 |
| CRB name: Chitungulu | | |
| Kamila | School | 150 |
| | Family planning | 50 |
| | Bee-keeping | 10 |
| Chocha | Clinic | 500 |
| | School | 150 |
| | Family planning | 30 |
| | Bee-keeping | 7 |
| | Community office | 24 |
| Nthumbe | School | 200 |
| | Family planning | 20 |
| | Bee-keeping | 4 |
| CRB name: Mwanya | | |
| Lukusuzi | Hammer mill | 300 |
| | Food security | all |
| Yakobe | Hammer mill | 300 |
| | Teachers house | 1 |
| | Food security | all |
| | Electric fencing | 32 |
| Mukasanga | Hammer mill | 300 |
| | Food security | all |
| | Family planning | 20 |
| Chizela | Hammer mill | 300 |
| | Well | 35 |
| | Food security | all |
| | Family planning | 20 |
| | School renovation | 140 |
| Mukwela | Court room | all |
| | Basic school | 200 |
| | Family planning | 50 |
| | Food security | all |
| | Food storage | 400 |
| | Solar light for clinic | 400 |
| | Community vehicle | Currently not released by the chief |

Economic benefits

Economic benefits are measured from employment levels resulting directly from ADMADE activities, such as services to the local tourist operator or jobs created through ADMADE itself. In all six areas where CRBs are functioning, employment levels are quite high, though diversification and expansion of employment opportunities remains a primary need identified in most VAG meetings throughout these areas. Employment levels for Munyamadzi are provided below as a case study and illustrate both the potential and the impressive progress being made to develop wildlife as an economic asset for Zambians who live with this resource:

| Analysis of annual household economic benefits from ADMADE for Munyamadzi Unit | | |
|---|----------------|-----------------------|
| Job category | No. households | Total annual salary |
| 1) From 40% wildlife management account | | |
| Senior village scout | 3 | ZMK 2,340,000 |
| Regular village scout | 23 | ZMK 16,800,000 |
| Assistant village scout | 6 | ZMK 3,792,000 |
| Drivers | 2 | ZMK 1,740,000 |
| Bookkeeper | 1 | ZMK 1,044,000 |
| Community Development officer | 1 | ZMK 1,044,000 |
| | | ZMK 26,760,000 |
| 2) From 35% community development account | | |
| Project supervisor | 1 | ZMK 780,000 |
| Storeman | 1 | ZMK 540,000 |
| Permanent workers | 16 | ZMK 6,720,000 |
| Typist | 1 | ZMK 600,000 |
| Community store salesperson | 1 | ZMK 480,000 |
| Community teachers | 13 | ZMK 6,900,000 |
| Air strip cleaners | 10 | ZMK 7,200,000 |
| Contract workers: | | |
| Pit sawers | 5 | ZMK 370,000 |
| Brick molders | 60 | ZMK 3,060,000 |
| Sand diggers | 4 | ZMK 90,000 |
| Road clearers | 45 | ZMK 1,350,000 |
| Stone crushers | 13 | ZMK 900,000 |
| Bricklayers | 8 | ZMK 920,000 |
| | | ZMK 29,910,000 |
| 3) Residents employed by Nyampala safaris | | |
| Permanent workers (6 months) | 14 | ZMK 2,970,000 |
| General workers | 40 | ZMK 1,200,000 |
| | | ZMK 4,170,000 |
| 4) Residents employed by Luawata safaris | | |
| Permanent workers (6 months) | 16 | ZMK 16,020,000 |
| General workers | 5 | ZMK 6,000,000 |
| | | ZMK 22,020,000 |
| 5) ADMADE allowances | | |
| CRB members | 10 | ZMK 2,000,000 |
| VAG members | 40 | ZMK 1,600,000 |
| | | ZMK 3,600,000 |
| Total households receiving income | 339 | ZMK 86,460,000 |
| Total households in the GMA (approx) | 1230 (or 28%) | |

Correlated with these results is the significant decline in poaching levels in Munyamadzi as well as land use disturbances that once adversely affected the safari industry in the area. The resident professional hunters from both hunting concessions in this GMA have corroborated this trend. A

tentative conclusion might be that employment levels reaching approximately 30% of the households in a game management area is sufficient to lower poaching levels to acceptable levels for wildlife numbers to grow.

The ADMADE pace: how fast it works

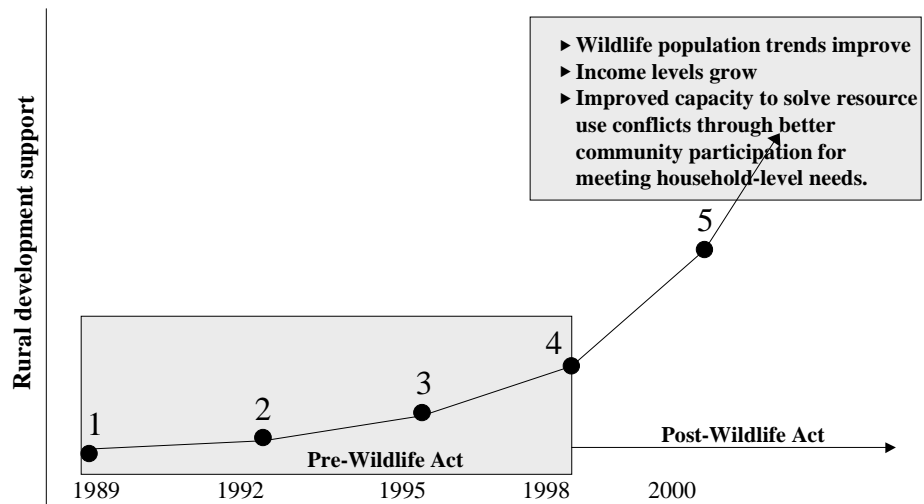
ADMADE has gone through almost ten years of research and development in CBNRM design and from these efforts a relatively refined and working model has emerged. Furthermore, the necessary preconditions for the model to succeed are now in place and include:

- 1) legal powers for communities to manage and benefit from their wildlife are defined,
- 2) a computerized revenue collection and disbursement system through the Wildlife Conservation Revolving Fund exists,
- 3) communities are represented on the Zambia Wildlife Authority Board,
- 4) private sector commitment to market wildlife products in ADMADE areas is strong,
- 5) institutional capacity to transfer community skills for implementing ADMADE and establishing organizational leadership structures exists, principally through Nyamaluma and its collaborating partners.

As a result, the pace of ADMADE implementation is now able to proceed at a much faster rate than has been possible in the past. Perhaps the most critical requirement for the ADMADE model to work optimally is to have democratically elected Community Resource Boards to represent the entire community. Capable and trusted leadership chosen in this manner will promote transparent management of community funds for supporting VAG-level needs, the adoption and enforcement of land use plans, and civic education to increase public participation in ADMADE-supported projects and cooperation with the private sector. The cost of these elections ranges from \$2500 to \$3500 per area and financial assistance to support these costs will be needed as part of the start-up costs for an ADMADE area.

Based on experiences where CRBs are now established and where there were prior efforts to test these structures with the formation of VAGs and various sub-committees, positive impact on wildlife production and revenue flows is achievable within two years after the ADMADE model is introduced in a game management area. Assuming continued commitment by local leadership, the demonstration of community benefits from ADMADE will encourage continued revenue growth and the potential for income diversification as income earning projects are identified and supported. As might be expected, there will be a necessary lag time for rural communities to acquire the skills needed to facilitate household participation in assessing their own needs and carrying out projects that help meet these needs. The new ADMADE structure provides an effective way for promoting these skills and ensuring accountability of results. The level of training and the timeliness of revenue disbursements to communities will certainly influence the pace at which communities can achieve this capacity. Current analysis of ADMADE results suggest that skills and community organization can reach a critical stage for rural development in about two years. At this juncture and provided income flows are sufficient, growth in rural development will grow dramatically as revenue injections into the local economy create employment opportunities (as illustrated by the Munyamadzi example) and improve conditions for food security, health care and education. In most of the ADMADE areas with well-

established CRBs, these trends are already beginning to unfold. The Figure below shows a simple time-log of ADMADE transitions from program inception (1989) to current opportunities for rural development and resource management.



1. Initial emphasis is on deployment of village scouts and law enforcement. Public education and leadership are relegated to local chief and unit leader.
2. Community accounts set up and sub-authorities become functional but lacking skills in leadership, planning, and organizing. Sub-authorities are largely appointed by chiefs
3. Communities recruit and train local bookkeepers and revenues are remitted to both 35% and 40% accounts. Wildlife Revolving Fund becomes computerized and more proficient in disbursing funds and Nyamaluma develops training modules for community skills. Program results become subject for workshops to review and debate program needs and designs
4. Communities adopt VAG formation and technical sub-committees to support sub-authority decisions and planning. Chiefs remain chairpersons but involvement by VAG-level participants improves. Greater transparency of funds but mismanagement is still a problem, and land use planning, budgeting, and quota setting become community-based activities.
5. Community Resource Boards now functioning in many areas. There is dramatic increase in public meetings for discussing community needs and involvement in ADMADE activities. Administration of program is delegated to educated, elected members in community with capacity to follow workplans, agendas, budgets and so forth. ADMADE results analyzed with locally collected data and technical sub-committees show increased level of commitment and sophistication to promote VAG-level benefits. Financial controls support community approved budgets and improved transparency of community funds.

Though untested, the ADMADE model is also likely to be a suitable, cost-effective approach for recovering wildlife in areas depleted of this resource. This assumes sufficient habitat is available for existing wildlife populations to reach commercially viable levels. Under these conditions, ZWA should confidently adopt ADMADE as an appropriate approach for wildlife recovery,

provided funds are available to support the needed start-up costs for introducing the program. Such costs should be regarded as an investment and not as a recurrent cost. Thus far, for example, six of the nine ADMADE areas that received initial start-up support from USAID have subsequently replaced their donated 4-wheel drive vehicle with a community purchased vehicle. Some have purchased motor-bikes to reduce the high cost of trips to towns for collecting salaries and carrying out other administrative needs. In general basic recurrent costs for wildlife management are being met, though levels of support are in most cases inadequate to address the full range of problems affecting resource management. This will likely require a review of income shares currently being remitted to CRBs for resource management support. Had these areas not received their initial start-up support, it is doubtful that current revenue flows would be possible or current levels of tourism interest in these areas would be as high as they are today. In most ADMADE areas in the Luangwa Valley, for instance, there has been an unprecedented surge in investor interest. Not all of these investment interests are appropriate or particularly beneficial to local communities but they do illustrate the growing success of ADMADE to attract investment to this sector.

Situations will occur where ADMADE success may be limited or pace of success is reduced. Such situations will likely correlate with areas in close proximity to urban centers where illegal pressures on resource use are relatively high. In these cases, external management authorities will have to intervene and provide additional resources to reduce the illegal trafficking of wildlife products.

It is interesting to note that one constraint impeding ADMADE communities to carry out effective resource protection themselves is the financial burden of processing wildlife offenses. Such costs include expensive vehicle trips to town, multiple overnight allowances for the arresting officers and drivers, upkeep costs for the accused and return trips to town for possible court hearings. Court fines when issued upon convictions are returned to the Central Government and none are returned to the community to help sustain local law enforcement costs. There are many cases where communities are forced to release apprehended poachers simply because they cannot meet the costs of taking them to town for prosecution. To help support these costs and further develop the concept of co-management of wildlife resources with Government, it is suggested that either

- 1) a substantial portion of the fines be shared with the CRB to support law enforcement efforts or
- 2) Ministry of Legal Affairs allows the CRB to use local courts to administer judgement on certain offenses that can be more cost-effectively resolved at the community level.

The ADMADE lessons: CBNRM training

One critical recurrent cost that will need external support for at least the next three to five years and which is critical to ADMADE's pace is the development of community skills in CBNRM. Community commitment to training is well demonstrated by the very high attendance of ADMADE training courses offered at the national training institute at Nyamaluma. Furthermore, participants to these courses attend without receiving per diems and CRBs often assist with a participant's travel costs to and from the institute. What is not met by the community and is currently beyond their reach are the actual course costs and the costs of the various extension training services provided by the institute. These costs are subsidized and supported almost

exclusively from outside donor sources and will need continued support for communities to continue their economic and social development under ADMADE.

ADMADE is fortunate in having a very strong foundation in developing a highly customized set of accredited training modules to support the different levels of the CRB leadership and management structure, from basic village scout training to leadership and administrative skills of elected CRB members. In total there are 15 modules with corresponding manuals offered at Nyamaluma and are taught by instructors with extensive field experience in monitoring and working with ADMADE communities. By having a centralized institute, training can more efficiently consolidate research results from the field into constantly changing curricula while integrating NGO expertise where such collaboration is needed. This has given ADMADE greater continuity for on-going development of community skills that require a certain degree of specialization such as quota setting, analyzing village scout data, auditing community projects, and so forth while diversifying into new skills through NGO collaboration, such as bee-keeping, agroforestry, and food security. As a result, ADMADE remains supported by a strong and dynamic training institute dedicated totally to those communities implementing ADMADE.

Key recommendations for improving training support to communities practicing ADMADE that build on the experiences of the Nyamaluma Institute are presented below:

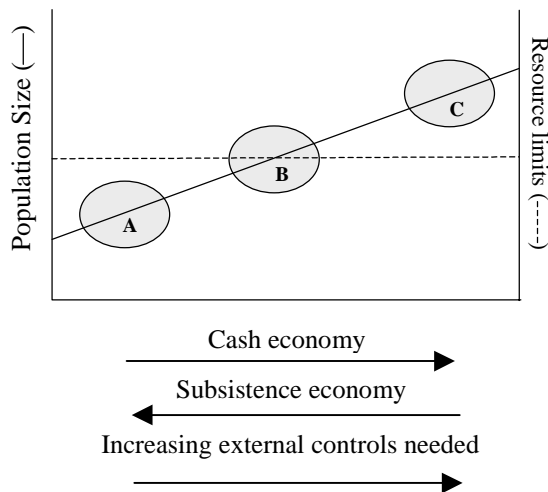
1. Training for most community skills should target those local residents capable and motivated to be trainers themselves in their respective communities. Nyamaluma should support such people with advanced, refresher courses to expand their capacity to reach more people in the transfer of skills.
2. There is need to up-date senior members of NPWS(ZAWA) with what has been taught to CRBs in order to maintain continuity in the program country-wide.
3. Nyamaluma Institute should engage NGO collaboration to develop appropriate linkages between community needs and skills development and should ensure such efforts are compatible and in support of the ADMADE structure and objectives. Current collaboration with Peace Corps, World Vision and CLUSA are exemplary examples of this approach.
4. Expanding the range and effectiveness of Nyamaluma into other parts of Zambia can be best achieved with the development of low cost, temporary sub-stations located near or inside ADMADE areas at critical points in the country. These sub-stations would consist of one to two people with sufficient mobility, preferably a motorbike, to reach ADMADE communities within a 100 km radius for a period of time funds allow, ideally two to three years. This approach would support continuity and uniformity of certain skills and methods needed by ADMADE where standardized approaches are desirable and would allow enough time to develop community residents as locally based trainers and facilitators. It would also help maximize the use of funds for CBNRM training by reducing the cost of 're-inventing' training approaches and would avoid divisive, competing training entities and the introduction of methods that may not be compatible with current efforts to maintain a national database for ADMADE.
5. Over 10 years of continuous research experience in CBNRM at Nyamaluma has enabled the institute to develop and apply innovative and extremely useful technologies to the management of natural resources on communal lands in Zambia. These efforts have resulted in over 25 publications and a series of post-graduate research opportunities by Zambian CBNRM practitioners who are providing increased excellence to the ADMADE program. Such a center for professional training in CBNRM is unequalled in Southern African and

should be recognized nationally for this service with sufficient levels of support for it to continue to provide this service.

The ADMADE lessons: resource management efforts

1. Striking a balance between human numbers and resource limits

The figure below show the relationship population size of communities practicing ADMADE and the resource limits of the area, where resource limits is defined as the capacity for wildlife resources in the area to sustain household needs. Communities whose populations have a low



impact on this capacity will likely be relatively small, given that per capita disturbances to the resources will be low, as shown by category A. In this case, communities adopting ADMADE would be able to meet household needs by relying on a subsistence economy and the economic benefits derived from wildlife as a 'cash crop'. This scenario is perhaps most favorable for implementing a wildlife-based CBNRM program, since more intensive agricultural uses to sustain a cash economy for household needs would not be so critically required. Unfortunately, relatively few game management areas fit this category.

As community size increases and human activities begin to impact on wildlife production because of per capita demands on renewable resources in the area, a cash economy oriented ADMADE becomes increasingly necessary to reduce conflicts with wildlife production. In this case, given by category B, ADMADE efforts should support efforts that offer households greater security against poverty through improved social services or from personal income derived from land uses not in conflict with wildlife production. Examples might include intensive agricultural cash farming, market diversification of wildlife and other natural resources, or household loans to support such needs as food security, education and health requirements.

Beyond this category are communities that have grown well beyond the capacity for wildlife revenues to have a significant impact on household needs. In this case, illustrated by category C, CBNRM efforts need to be more confined to efforts that combine a well-enforced zoning policy with a robust market economy capable of producing cash markets for most if not all households in the area. Managing these activities will likely require a relatively high level of sophistication and organization with increasing dependence on NGOs and other external support for help. In addition a range of conflicts will likely be encountered as individual enterprises put increasing strains and stresses on the land to sustain viable populations of wildlife. Reliance on external management and interventions may therefore be required should community-based leadership be unable to contain the required level of management controls.

Suggested measures for ADMADE to maximize its success under these scenarios

1. Increase economic incentive for producing wildlife on communal lands

Increasing the economic reward to produce wildlife will create strong disincentives to land uses that might compete with wildlife. To begin with, ADMADE communities should be entitled to the full license value of the animals they produce minus an acceptable amount that would be regarded as a commercial tax, consistent with other commercial producers. This tax is normally 7.5% in Zambia. Currently community wildlife producers are required to pay 67.5% back to Government (50% to GRZ and 12.5% to WCRF). In addition, there could be additional ways to reward communities for producing high quality wildlife tourist products, such as a sliding fee scale for trophy size of certain key species. Currently concession fees allow this because the quality of the area is market driven. However, for longer lease periods, any improvement in the quality of the hunting area is not rewarded until the next tender bidding, which may be more than 5 to 10 years. Considerable effort has been made to document these and similar problems and provoke stakeholder debate and resolutions. This has led to specific proposals for an improved licensing system and improved transparency of funds collected and remitted to community accounts. Problems that have been addressed but where weaknesses remain include the following:

- a. taxation on community revenues produced from animal sales is currently 7 times higher than commercial farmers who produce livestock,
- b. statutory pay scales for residents employed in the tourism sector needed to protect workers and promote local appreciation of the tourism sector,
- c. communities lack direct involvement in lease negotiations and are not party to lease agreements,
- d. long-term lease agreements do not offer a sliding-scale for increased market value of concession fees to the local community should the quality of the hunting area improve,
- e. there is no commercial incentive for communities to produce better quality trophies
- f. special licenses remain a source of income loss to local communities.

(NOTE: Within the month of September 1999, the NPWS(ZAWA) Acting Director and the Minister of Tourism have convened talks to discuss the issue of special licenses. An agreement has been reached to have a specially appointed committee adopt a quota for special licenses, review all requests for special licenses, and make recommendations to the Minister of Tourism for their issuance.)

ADMADE will require continued and determined policy development on these and other issues if tourism and conservation interests are to be fully supported by communities as co-management partners with Government.

2. Improving cash markets without risking wildlife habitat

For most game management areas, human population sizes are too high to rely exclusively on household dividends from wildlife profits to sustain community commitment to wildlife production. It will therefore be increasingly important for ADMADE to expand and develop additional markets available to households for increasing personal income in ways that will reduce pressure on wildlife or their habitats. Efforts where this approach has been introduced

have led to reduction in wildlife poaching and disturbances in prime safari hunting areas (Mwanya and Munyamadzi). Primary examples for future initiatives by ADMADE should include:

- a. Small-scale agricultural cash crop production
- b. Non-timber forest products, particularly honey and wild mushrooms, as well as thatch and poles for local tourist operators
- c. Timber products through low-volume, selective cutting
- d. Marketable skills within the community supported by wildlife derived revenues or from other sources (e.g. carpenters, builders, road builders, etc.)
- e. Tourism employment (e.g. cooks, guides, attendants, etc.) and tourism joint ventures to promote community ownership and job opportunities
- f. Small business enterprises through community-based loans (e.g. shops, tailors, farming inputs, family health products, etc.)
- g. Fishery resources and precious stones

3. Provide increased access to social marketing of family health and family planning products

The long-term balance between communities living in and around game management areas and the renewable resources they wish to benefit from materially will depend on human numbers that extract household requirements from the resources. ADMADE's initial effort to introduce family planning services through a network of well trained residents serving as community-delivery agents of social marketed products such as Prolact and Safeplan has been well received where the program was introduced. Some communities have even committed shares of their wildlife revenues to subsidize the cost of these products. Despite modest success, these efforts are too little and need further investments and support to enable these services to be fully appreciated and sustained by the communities themselves. Ensuring the continued expansion and strengthening of family planning services should be an important component of any future ADMADE support.

2. The food security imperative for reducing illegal hunting in a GMA

A small but significant number of local residents in most GMAs contribute to a large annual loss of wildlife numbers from illegal harvests such as snaring and unlicensed hunting. Interviews with local residents reveal most of these harvests occur during critical months of the wet season when food shortages tend to be most severe and the illegally obtained game meat can be exchanged for bulk foods like maize or sorghum. In some areas snaring correlates with the dry season when animals can be more easily caught at sites animals commonly frequent, particularly waterholes. What is very clear is that the majority of animals obtained in this way are used to procure food security or to generate income for meeting other household needs.

Lack of food security varies among village area groups because of differences in soil quality and proximity to markets as an incentive to producing a food surplus and adopting improved farming methods. Variation within a village area group is often attributed to household differences in farming practices, loss of critical family members or poor family health, and poor crop varieties. It is believed that a more pro-active approach by ADMADE in collaboration with other partners working together with Nyamaluma can influence these variables considerably for helping improve food security in an ADMADE area.

Lost tourism revenues (e.g. safari hunting) because of illegal wildlife harvests by residents to satisfy household food requirements is estimated to be for most areas far greater than the investment cost of solving food security. There are a number of ways ADMADE has begun to address this problem and already there are hopeful signs of success in lowering rates of snaring and illegal hunting. These initiatives represent a fundamental reorientation for how wildlife management is now being approached by communities who have the leadership and skills capacity to deal effectively with this problem. Complementing the food security and poverty threat to wildlife production is the additional threat that comes largely from non-residents who traffic game meat to both urban and rural markets outside the game management area. The ADMADE approach of deploying village scouts to protect and monitor natural resources under the supervision of unit leaders and the local Resource Management Committee is providing an effective deterrent, provided that revenues meant to support these efforts are disbursed in a timely manner. Without addressing both threats, local food security and poverty and the external pressures from game meat traffickers, ADMADE revenues will not reach their full sustainable potential and will more likely decline over the long-term.

Suggested measures for integrating food security into sustainable management of wildlife

1. The ADMADE community structure, consisting of a Board, technical committees and village area group committees, provide an effective framework for coordinating both community funds and human resources in reducing food shortfalls. Food security will therefore be addressed at the VAG level to achieve the following objectives:
 - a) to monitor short-falls at end of harvest to budget for food relief
 - b) to monitor household yields to identify families with special needs
 - c) to offer cash sales to local farmers who produce a surplus for meeting short-falls at a lower cost while stimulating 'community' economy
 - d) to provide trainers and advisors for improving food production and crop varieties
 - e) to establish community-based stores for agricultural inputs
 - f) to reduce crop loss from wildlife
 - g) to monitor VAG-level wildlife disturbances
2. Coordinate strategic partners in these efforts at a regional level where expertise can be brought to bear with lowest cost and greatest efficiency.

Nyamaluma Institute (at the encouragement of USAID Agricultural Program Officer) has already demonstrated the enormous potential for dealing with the food security challenge by collaborating with CLUSA and World Vision in the Eastern Province and developing program coordination with Peace Corps to extend technical assistance to ADMADE communities. These efforts have provided the additional benefit of helping Nyamaluma build technical proficiency in facilitating the training and monitoring associated with this effort and disseminating lessons and results to ADMADE communities that participate in its various courses and workshops.

3. Establish demonstration sites in the more vulnerable VAGs within different regions where food security problems are acute to facilitate local training and learning opportunities.

This will help maintain local involvement and interest for producing more wildlife as a cash crop by improving food security at the household level. Aside from the various approaches that will

be show-cased, the most important lesson local residents will learn is the added value of having wildlife by using revenues legally derived from it to help finance food security while also stimulating social and economic opportunities for all members in the community.

3. Land use plans that are dynamic, locally acceptable and enforceable

ADMADE's experience in facilitating community-based land use plans has been extremely insightful for showing the capacity of community leaders to develop innovative and low-cost solutions to potentially destructive and costly resource use disturbances. Such plans also represent a fundamental shift of authority from Government to local communities for dealing with land use management. Experiences have also revealed that traditions and local customs reinforce the way communities examine and agree on land use issues and that land use decisions when derived through traditionally accepted methods will likely be respected and followed. ADMADE's new leadership structure under the new Wildlife Act provides a balance of traditional and elected leadership and gives communities statutory powers for managing wildlife through land use plans. This development now provides communities with an extremely exciting opportunity for dealing with new land use issues such as illegal settlements, zoning, land tenure arrangement, commercial joint ventures, rights of access and so forth with the legal backing to enforce them. It will therefore be very important to demonstrate the full utility of land use plans for achieving the conservation and rural development objectives of ADMADE.

Measures needed to strengthen community-based land use plans for expanded applications

1. Improved consultation and partnership with District Councils

District Councils through the Ministry of Local Government have certain legal powers over land use regulations for a given District, particularly over fishery and forestry resources. Cooperation between the District Councils, as a Government agency, and the Community Resource Boards will be extremely critical to take full advantage of the powers invested in the councils to help develop more holistic and integrated land use plans for ADMADE areas. Additional effort will likely be needed to harmonize this relationship should areas of conflict arise.

2. Lease agreements that require consultation and approval by Community Resource Boards

Land use plans may not fully support the interests of the private sector if lease agreements exclude conditions negotiated by Community Resource Boards. This is because the community would be less likely to adopt certain use decisions that support private sector needs if the community were excluded from negotiating additional community benefits, such as higher employment levels, as part of the agreement. Improving the level of community participation in resource use lease agreements will be an important focus of future ADMADE efforts.

3. Improved guidance on land tenure decisions to encourage private sector investments without losing community ownership of the land

Numerous parcels of valuable land in game management areas have been allocated to questionable investors through title deeds that effectively remove the local community from any future ownership of these parcels. Hence, any added value to the land resulting from investments would be lost to the community. Options that allow communities to lease land to investors

without losing ownership do exist but have not been developed in the ADMADE program as a way of increasing opportunities for investor commitments on terms that can be mutually agreed. ADMADE will need to develop greater understanding of land tenure and provide improved guidance to communities on how to maintain land ownership through such land use options as land leases or joint ventures.

4. Gazetting of land use plans

The Zambia Wildlife Authority through the Ministry of Tourism has the statutory powers of approving or rejecting land use plans adopted by the Community Resource Boards. Those that are approved would have greater recognition by any potential user of resources on these lands if they were legally recognized as a gazetted instrument of law. There will be need therefore to develop the accepted procedures and guidelines whereby land use plans can be gazetted under Zambian Law.

ADMADE future: Scenarios for continued support and program strengthening

ADMADE is a national program that has spread into most provinces of the country with almost universal appeal and support among its community constituents. ADMADE is also politically accepted among its national leaders, who view it as a positive approach for decentralizing Government authority over the use and management of natural resources. Furthermore, it has begun to fuel renewed confidence among private investors for wildlife tourism in Zambia and in game management areas in particular. There is no doubt, Zambia has an exciting and promising approach to conservation that is distinctly African. As Africa struggles to achieve stability and democracy among its sister States, models of success for developing wildlife and other renewable resources as an economic solution for rural development will be greatly needed. Zambia's ADMADE may be one of the better models in this regard, but its ultimate success will likely depend on how well its national leaders apply the lessons and experiences of ADMADE into continued policy reform and program implementation. The political will for doing so is essential for demonstrating that conservation and rural development can coexist, a challenge that will most certainly shape the kind of world future Zambian generations will inherit.

From the results presented in the different sections of this paper, recommendations and strategies for how best to meet this challenge are offered here for ways continued support to ADMADE could be best applied. These recommendations are organized according to the various levels of program activity without attempting to prioritize their relative importance. This is because the ADMADE approach is highly multi-sectoral, involving many links and commitments among its participating partners. Each is important if not critical to the overall success of ADMADE. The recommendations presented here attempt to identify ways these links can be supported and strengthened.

1. ZAWA stewardship

- a. The ZWA Board will have considerable influence on how ADMADE is interpreted and supported with appropriate policies. This will require an effective way for Board

members through its Director General to be fully aware of ADMADE progress and needs. It is recommended that a technical and administrative secretariat for ADMADE be instituted to maintain an accountable flow of information from the field on program results and activities and to be responsible for coordinating and directing appropriate action-oriented solutions for program strengthening. In this way ZWA would have an effective way of communicating results to its donor partners while building on its existing institutions and professional staff (e.g. WCRF, Nyamaluma, PAPU, and Research Section) to support project analysis for project documentation as required by the Board or its various partners. Headed by a director or a co-ordinator, the secretariat would have the authority and responsibility to overview the various technical and administrative requirements for ADMADE, such as

- 1) coordinating community quota recommendations,
 - 2) reviewing and gazetting community land use plans,
 - 3) facilitating lease negotiations between community representatives and operators,
 - 4) coordinating and promoting training needs, and so forth.
- b. It is further proposed that an ADMADE directorate be constituted among its key stakeholders and contributing partners. The principal stakeholders would include representatives of Community Resource Boards, tourist operators in the GMAs, and the ZWA Board. Contributing members would also include representatives of the donor /NGO organizations contributing significantly to the ADMADE program. The purpose of the Directorate would be to meet periodically and help resolve problems and conflicts and where necessary formulate proposed policy reforms for ZWA Board approval. This approach would greatly enhance current efforts in building consolidation and consensus for how best to apply ADMADE lessons and results for continued program strengthening.
 - c. Currently communities do not have a direct voice in expressing their views and criticisms over possible issues that require an objective forum for finding workable solutions. The ADMADE Directorate would be an extremely useful vehicle for facilitating such dialogue so that all the key partners to the program can gain an appreciation of possible problems limiting ADMADE success while applying collective efforts to find the best solutions. It is therefore recommended that external support be provided to help meet the costs of these structures, the Secretariat and Directorate, for a two-year period. During this time, improvements to partnership building and program leadership will be monitored and evaluated.

2. Financial monitoring and services

- a. In the past year WCRF has demonstrated an improved level of transparency and professionalism in supporting communities with financial information and services, including the transfer of ADMADE earnings. There is need to build on these achievements through ZAWA's new financial and commercial section with continued efforts to produce statements on earnings and disbursements during the tourist season. There is also need to improve the system of communication between this section and CRBs to ensure funds are released as quickly as possible but with the necessary controls that protect community interests when community approved budgets are not followed. Such improvements should be regarded as important investments since results will ultimately lead to improved ADMADE performance and increased wildlife production.

- b. A key requirement for maintaining accountability of community funds is to conduct periodic audits of community accounts. WCRF together with members of Nyamaluma staff have undergone basic auditing skills training, and initial audit inspections point to the very important need for these inspections to continue. Until ADMADE's own financial capacity is able to sustain the costs of these inspections, it is recommended that support be specifically allocated for this purpose.

3. Improved licensing system and income diversification

- a. Past evidence has clearly demonstrated the difficulty in adhering to sustainable quotas and assuring local communities the wildlife they produce will be effectively licensed to avoid any possible loss of community income. A new licensing system was designed in 1999 to give such guarantees while also making licensing procedures user-friendlier for clients. The new system was arrived at by consensus among operators and professional hunters in consultation with NPWS(ZAWA) and ADMADE staff. It is recommended that this new licensing system, referred to as the 'Combined Licensing System', be implemented in those areas with functioning, well-trained CRBs in 2000. This new licensing approach may have very significant implications for both improved revenues and for how communities perceive their wildlife as a community-owned resource. Support will be needed to closely monitor its success and prepare a detailed analysis for its continued use.
- b. Increased employment opportunities from wildlife is much needed in ADMADE areas to reduce poverty pressures contributing to poaching and other resource use disturbances. Policies that help create such opportunities need to be explored and developed. One such opportunity could be through the national game licenses issued to non-residents who hunt in communal areas. It is suggested that a statutory instrument be developed to require these hunters pay a fixed amount on a daily-rate basis to the CRB for employing a team of residents to offer various services to these hunters (e.g. trackers, cooks, camp attendants, etc.). Support will be required to ensure proper training and organization is made available for CRB leadership to implement these services effectively while providing employment opportunities to those people most likely to disturb wildlife resources in a game management area.

4. Nyamaluma Institute and community capacity-building

- a. Nyamaluma's transition into an accredited college is a necessary step for building institutional capacity to meet the growing training needs of communities participating in ADMADE. Its institutional history spans 10 years of testing and developing appropriate CBNRM methodologies and has a qualified Zambian staff to teach these skills to residents of GMAs. Newly formed CRBs will thus be able to take full advantage of the accredited courses now offered by the college and as a result will be better prepared to administer the full range of responsibilities communities are expected to shoulder under the new Zambia Wildlife Act. To maintain the full range of training services the college is capable of providing, continued external support will be required to help meet course costs, extension services and certain capital improvements to the college. The objective of this support would be to double its current level of annual student enrollment of approximately 600 and to increase extension visits threefold.

- b. Nyamaluma's commitment to research and monitoring has been an essential component for developing CBNRM methodologies and course curricula and has enabled considerable development of Zambian-based professionals in CBNRM. With this background in CBNRM results analysis and the range of facilities available at Nyamaluma, the college could play a pivotal role for promoting research and post-graduate studies by Zambian students pursuing a career in resource management. It is therefore recommended that a CBNRM Research and Grants Fund be set up for the College to allow its current monitoring studies of ADMADE to continue and to provide grants to Zambian graduate and post-graduate students for CBNRM-related research. The college will also explore ways that such studies could be used as course credits for University of Zambia.
- c. It is recommended that support be provided to expand Nyamaluma's geographic influence by establishing two to three sub-stations at locations where community participants may find difficulty in traveling to Nyamaluma as frequently as other communities are able to. This recommendation would enhance the dissemination of skills and methodologies adopted by ADMADE. A sub-station would consist of one to two qualified trainers in a particular area to maintain regular training support to the target communities while being able to offer the full range of training materials and expertise provided by the college.
- d. To help support the long-term funding requirements of the college, it is also recommended the college be administered as a trust answerable to the ZWA Board but with Trustees from various organizations able to help sustain a Trust Fund for its continued operations.

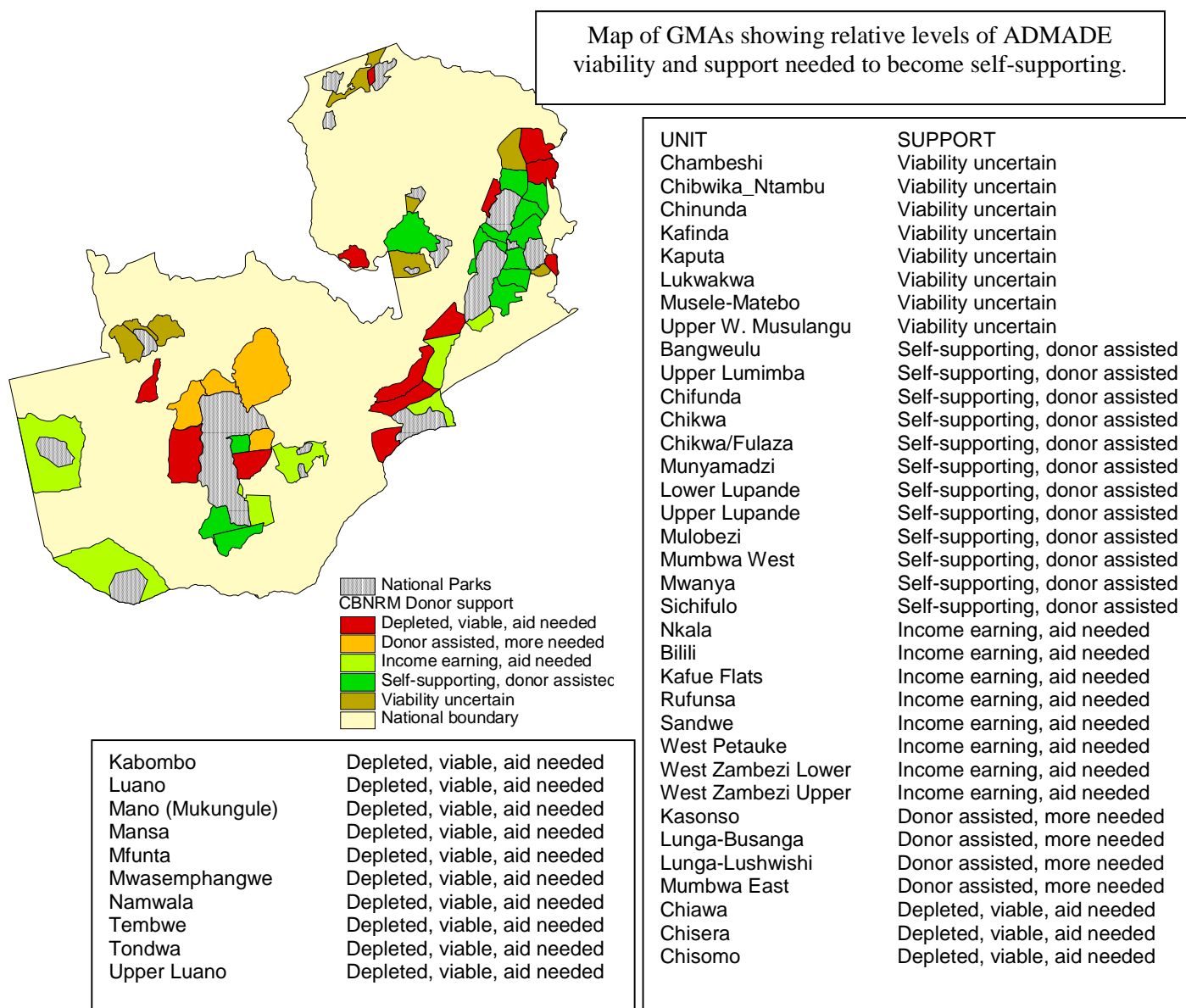
5. NGO and multi-sector collaboration

- a. Specialized services by NGOs to help promote local employment opportunities and improve food security are a strong reason to encourage NGO collaboration with ADMADE. Such collaboration needs effective coordination with Nyamaluma to reduce duplication of work and to help facilitate identification of training needs for a particular CRB where NGO services might be desired. Furthermore, coordination of NGO activity will provide opportunities for Nyamaluma staff to become proficient in teaching new course offerings through their introduction by an NGO partner.
- b. Such NGO collaboration may have certain regional opportunities, creating different mixes for different areas. For example, in Eastern Province there are a number of USAID funded activities through various NGOs that offer family planning, forestry management, and food security skills and Nyamaluma is taking a lead to help coordinate their involvement in the overall training program for this region of ADMADE activity. Such opportunities for other regions will need to be pursued with careful planning to ensure NGO participation is supportive of the ADMADE policy and its objectives and is willing to work within the CRB structure.

6. Regional needs and opportunities for ADMADE expansion

- a. There is great concern that further delay in supporting critically needed start-up costs for communities committed to introducing ADMADE into their area will lead to significant depletion of wildlife resources and possibly permanent loss of any future opportunity to develop wildlife as a cash crop for rural income. ADMADE areas that have already

received an initial investment in capital support, training and CRB formation are now largely self-sufficient with the exception of continued skills training in new and more advanced land use practices and leadership skills. These areas, however, only represent about 35% of the total GMA estate. A number of areas have a high wildlife potential in terms of habitat available and species present but need urgent support to allow the ADMADE process to rebuild the revenue-earning capacity for these areas. The map below shows the level of ADMADE development in Zambia's game management areas and the current level of support and viability that exists among these areas. Critical start-up investments for introducing ADMADE will vary depending on current revenues an area is sustaining. For areas lacking any income but where viability for recovery is strong, investment costs will likely total \$75,000.



- b. To support these investment costs, it is recommended that an ADMADE Area Development Account be established with support from donor sources (an possibly from

the revenue that could be generated from the tax levied on ADMADE profits earned by existing ADMADE areas). ZWA ADMADE Secretariat would then be responsible for assessing the actual needs in consultation with the community and possible private sector partners as a basis for arriving at an appropriate start-up investment plan. Commitments from the community would be a conditionality for this investment as a way to facilitate the recovery process.

- c. Strategic opportunities now exist in Eastern and Northern Provinces to expand ADMADE because of the growing number of communities outside existing ADMADE areas requesting to have ADMADE introduced. Because ADMADE is relatively well advanced in those areas where the program was introduced with USAID support, there are important reasons why an expansion and consolidation of ADMADE in this region makes good sense:
 - 1) would increase protection of Luangwa Catchment's watershed, much of which is in national forests
 - 2) would increase opportunities for wildlife corridors between national parks, both within Zambia and across national borders with Malawi and would thereby hasten the process of wildlife recovery
 - 3) would reduce poaching pressures in existing ADMADE areas and national parks since the source of illegal hunters apprehended from these areas are usually from the plateau where ADMADE's expansion is recommended
 - 4) there is a good network of NGO partners in the area already working with Nyamaluma.
- d. There are strategic regional threats affecting ADMADE's success and expansion which will require additional support:
 - 1) In Lower Zambezi, illegal game meat and excessive charcoal trafficking is contributing to unsustainable land use practices and will likely undermine future ADMADE success. These markets are unregulated and driven by high commercial demand from Lusaka. Given the absence of protected forest areas in the area and the high wildlife potential in the area (well above average species richness of large mammal species), the ADMADE approach could offer an effective solution to these problems over the long-term. For the short-term, however, additional support will be needed to coordinate and strengthen efforts by the District Council and other Government sectors to improve regulations and controls for the trafficking of game meat and forest products to urban areas. Part of the solution will likely include ways of improving commercial markets for products (e.g. intensive cash crop farming, wild mushroom and honey farming, etc.) that are not destructive to resources critical to ADMADE's success. Equally important will be the need to build strong private sector commitment to the area in terms of serious investment for tourism development that relies heavily on local employment and full use of the area's wildlife capacity. It is recommended that a team of ADMADE collaborating partners (e.g. Peace Corps, CLUSA, World Vision, Nyamaluma, District Council, and private sector operators) form a consortium of community support to ensure ADMADE introduction in the area is better able to reduce the level of threats currently facing the area.
 - 2) A comparable approach will be required for certain areas surrounding the Kafue National Park although resource-use conflicts will differ. In particular,

there is serious conflict over limited waterholes critically needed by wildlife to sustain their numbers. Human activity is seriously limiting access to these waterholes due to increased presence of humans and livestock. An important tool for reducing these conflicts is the development of well managed dams established in non-wildlife areas. Such solutions will depend on community leadership to recognize the need to balance competing land use pressures if they are to sustain the full economic benefit of wildlife. Acceptance of any land use intervention, especially where households might need to be relocated, is expensive and requires a participatory process to educate communities. Support would therefore require a strong component of community-based land use planning with financial resources to help support the decisions that might lead to reduced conflicts with wildlife. Again, the process should involve a consortium of NGO partners collaborating with ZWA and ADMADE to help mobilize short-term help while community leadership maintains long-term commitment to its success with back-up support from ADMADE/ZWA staff.

7. Species-specific studies

- a. Monitoring results show certain large mammal species in various areas have probably declined. Cause for this is not absolutely clear, though it is likely that both legal and illegal hunting are contributing factors. An isolated population decline of Zebra in one area, a species not heavily hunted or poached, suggests some other factor, possibly disease or species interactions. Though eland has been removed from quota for a number of years in Luangwa Valley, recovery of this species is not being observed. Such species-specific questions can only be answered with more focused research to ensure current hunting pressures are advisable and whether additional management steps are required to improve population performance. Such research should combine a component of community participation to ensure local CRB authorities maintain long-term monitoring of these species. Funds to help support this research should be an important part of a long-term strategy to sustain the economic importance of wildlife.

8. Tendering, concessions, and joint ventures: community link with private sector

- a. Past efforts to tender hunting concessions in ADMADE areas have been plagued with political interference and lack of transparency in how companies are selected. This has resulted in a number of concessions losing revenues and has also led to some operators 'feeling' immune to fulfilling their obligations to their community partners. As a result, ADMADE results have been relatively poor in these areas.
- b. These past difficulties in awarding areas to the most competent companies have also made Zambia's wildlife industry less competitive, making wildlife less profitable as a land use ADMADE is encouraging communities to adopt.
- c. The ability for ZAWA to win the confidence of its donor partners will strongly depend on how transparent and professional the allocation procedures are for awarding hunting concessions to safari operators.
- d. It is therefore proposed that
 - 1) ZAWA set up its own administrative arrangement for awarding concessions to safari operators based on a highly transparent and profession procedure that encourages fair competition among the bidding operators.

- 2) The allocation procedure be based on a one-tiered process to reduce risks of changes being made by parties outside the approved body appointed to make the selection.
- 3) Community Resource Board be party to the selection process and objections to a given company based on past experience by the CRB be accepted as a basis for a given applicant not to be considered.

9. Supporting the educational needs of Patrons in this sector

- a. For nearly 10 years traditional rulers have served as Chairpersons for the Wildlife Management Sub-authority. Under the new Zambia Wildlife Act they now serve as Patrons to the CRB. Some traditional rulers have viewed this as a threat on their traditional authority. The ADMADE intention is to improve local support for wildlife management by allowing communities to elect their own representatives who can act on their behalf and be more accountable for making decisions are in their interest. Past experience has shown that decisions guided only through the local Chief often favor members of the Royal Family. Yet, Chiefs are highly respected members of traditional society in Zambia and should be afforded a rightful and meaningful role in complementing and strengthening the role of the Community Resource Board, especially in helping safeguard the resources of their area. As of yet, the best way for doing this has not been clearly demonstrated and may have to be solved through an adaptive management approach over the near future as the new ADMADE structure is practiced, monitored and studied.
- b. One of the problems likely to impede efforts in finding a solution is that most traditional rulers have not been provided opportunities to fully understand the complexities and challenges of governing and supporting communities through well regulated management of wildlife resources. Obviously this limits how effective Patrons can be in contributing to their new-found role in ADMADE. It is proposed that a series of special 'Patron training seminars' be developed to help Zambia's traditional rulers maintain a dignified and meaningful role for ADMADE and to help harmonize the working relationship between CRBs and traditional rulers.

10. Futher strengthening of family health/family planning services in GMAS

ADMADE could provide an effective way for introducing and sustaining health services through community-based delivery approaches. This has been illustrated by the initial efforts of community delivery agents who are currently supplying and marketing family planning drugs to local residents in a number of game management areas. Recognizing the potential cost to food production that treatable diseases cause by reducing needed manpower during the farming season, continued community-based approaches for rural health care services should be actively encouraged. There are strong arguments for linking such health care services to ADMADE. Foremost is the fact that revenue generation is sufficient in most successful ADMADE areas to subsidize these costs as a social benefit from wildlife revenues. Second, ADMADE has developed community organization for administering community-based activities. Third, arable soils in most game management areas are limited, often below 6%, and many families have difficulty in providing food to household members. It is therefore proposed that the initial efforts by Nyamaluma in conjunction with the Zambia Family Planning Service to develop community delivery agents of family health product be fully supported. Such support should allow a full-

time member of staff at to promote the continued development of this program with additional health care products, such as mosquito nets. Sufficient support should also be provided to enable the number of Community Delivery Agents to increase from 24 to not less than 60 in the Luangwa Valley. Similar efforts should be directed in other GMA regions.